

Frobenius splitting of semi-infinite flag manifolds

Wednesday, 6 February 2019 11:00 (1 hour)

We explain that extremal weight modules of quantum loop algebras give rise to the projective coordinate ring of the formal model of the semi-infinite flag manifolds over the ring of integers with two inverted. Then, we exhibit how this gives rise to the Frobenius splitting of such an (ind-)scheme. This particularly implies that the Schubert varieties of the quasi-map spaces from a projective line to a (partial) flag manifold admits a Frobenius splitting compatible with the boundaries, and consequently such varieties are normal and has rational singularity in characteristic zero. This extends the case of the genuine quasi-map spaces by Braverman-Finkelberg and the asymptotic case by myself.

If time allows, we explain how to use such results to understand the structure of equivariant small quantum K -theory of a (partial) flag manifold.

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